ABSTRACTS

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Delay of puberty and reproductive performance in male dogs following the implantation of 4.7 and 9.4 mg GNRH-agonistic Deslorelin at early prepubertal age

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OBJECTIVES AND METHODS: Stray dogs are major problem in big cities. Contraception is the best solution to control the growing population. Traditional ways of contraception by ovariohysterectomy (OVH) and progestins administration are presently used but with many negative effects to dogs. A new contraceptive method by GnRH-agonist implantation (Suprelorin®; Peptech Animal Health) has been proven for use in dogs for long term reversible contraception without negative effects to the dogs (1). The objective of this study is to test the efficacy of GnRH-agonist implantation in early prepubertal male dogs on long term suppression of their reproductive performance.

Eleven dogs (six male beagles from two litters and a litter of five mongrel) at the age of 4 months were allocated into two groups by simple randomization. The first group of 2 male beagles and 2 mongrels were subcutaneously implanted subcutaneously with a 4.7mg deslorelin at the interscapular region. The second group of 2 male beagles and 2 mongrels were treated with a 9.4mg deslorelin implant. Three dogs from each litter were implanted with placebo as the control group. Each dog was kept with a family of veterinary students and other owners. Sexual behavioral changes and testicular size were monitored every 2 months after the treatment. Semen collection and semen evaluation (2) were performed at 8, 12, 15, 18, 24 and 30 months of age after the treatment.

RESULTS: All dogs in the control group showed normal development of testicles, male behaviour (3) and sperm quality (4) from 12-15 months old., Three male dogs implanted with 4.7 mg deslorelin began to show male sexual behaviors (3) and their testes became well developed with firm consistency at two and half years post implantation. Semen was collected in 2 dogs at this time, with normal sperm quality (4). The other dog failed to ejaculate, however attempts to collect epididymal sperm from epididymis on the date following castration by flushing sperm diluent through the vas deferens (5). No epididymal sperm was found from this dog. Meanwhile other 5 male dogs implanted with 9.4mg deslorelin, showed only slightly male behavior, very small and soft testes, very low libido and no collectable semen at ages of 2.5 years (2 beagles) and 3.2 years (3 mongrels). No significant differences of growth, size, height, figure or behavior between the control and implanted groups (excluding the testicular development).

CONCLUSIONS: GnRH-agonist implantation in early prepubertal dogs could be effective as a safe contraception technique by the desensitization of the pituitary gonadal axis (1) without an up regulation or flare up effect. The 4.7 mg deslorelin GnRH-agonist was effective for less than two years (except one implanted mongrel dog) whereas the 9.4 mg deslorelin GnRH-agonist is effective for more than two years. These 5 dogs remain under observation and are still without signs of puberty. The difference of the duration of the GnRH – agonist effect might be due to the differences in the implant concentration or dosage or simply individual dog variation but is most likely to be related to the duration of release of deslorelin from the 9.4 mg implant. The duration of release has been measured in vitro to be at least twice that of the smaller dose implant. (T E Trigg pers comm.)

In conclusion, the study demonstrated the long term delay of puberty and reproductive performances in male dogs following the GnRH agonist deslorelin implantation at 4 months old.

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